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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/772,206	02/04/2004	Marc D. Andelman	0652-012US2	4243
32665	7590	09/08/2004	EXAMINER	
LESLIE MEYER-LEON, ESQ. IP LEGAL STRATEGIES GROUP P.C. 1480 FALMOUTH ROAD P.O. BOX 1210 CENTERVILLE, MA 02632-1210			PARSONS, THOMAS H	
			ART UNIT	PAPER NUMBER
			1745	
DATE MAILED: 09/08/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/772,206

**Applicant(s)**

ANDELMAN ET AL.

**Examiner**

Thomas H Parsons

**Art Unit**

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Double Patenting*

1. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

2. Claims 1, 2, 13, 15 and 18-21 are rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 61-63 and 65-67 of prior U.S. Patent No. 6,709,560.

This is a double patenting rejection.

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

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4. Claims 1-28 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-5 and 7-29 of U.S. Patent No. 6,709,560. Although the conflicting claims are not identical, they are not patentably distinct from each other because:

Claim 1 of U.S. Patent No. 6,709,560 claims a flow-through capacitor comprising a plurality of electrodes comprising an electrode material having a surface area for electrostatic adsorption of feed ions; a pore structure in one or more of said plurality of electrodes, whereby said electrode is a porous electrode having a pore volume; and a first charge barrier material different from said electrode material, located adjacent to said electrode.

In contrast, claim 1 of the instant application claims a flow-through capacitor comprising a plurality of electrodes; and a first charge barrier located between two of said plurality of electrodes, but is silent as to the electrode material, pore volume, and charge barrier material different from the electrode material.

However, the transitional term “comprising” is open ended and does not exclude additional unrecited elements. Accordingly, the claim of the instant case is open for the inclusion of other unrecited elements.

Further, locating the charge barrier between electrodes would obvious provide for a charge barrier adjacent the electrodes.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have expected the flow through capacitor of the ‘560 Patent to provide the flow through capacitor of the instant claim as both are structurally similar.

Claim 2: Claim 2 of the '560 Patent discloses a charge barrier characterized by low resistance-capacitance.

Claim 3: Claim 5 of the '560 Patent discloses that at least one of the electrodes is an anode and at least one of the electrodes is a cathode.

Claim 4: Claim 7 of the '560 Patent discloses a charge barrier comprising a first semipermeable membrane.

Claim 5: Claim 8 of the '560 Patent discloses that the charge barrier further comprises a second semipermeable membrane, the first membrane being a cation exchange membrane and the second membrane being an anion exchange membrane.

Claim 6: Claim 9 of the '560 Patent discloses that the anion exchange membrane is proximal to the anode, and the cation exchange membrane is proximal to the cathode.

Claim 7: Claim 10 of the '560 Patent discloses that the position of the anion and cation exchange membranes relative to the electrodes are reversed by reversal of voltage polarity on the electrodes.

Claim 8: Claim 11 of the '560 Patent discloses that the electrode is operated in the charge cycles of opposite polarity, separated by discharge cycles.

Claim 9: Claim 13 of the '560 Patent discloses a flow channel.

Claim 10: Claim 14 of the '560 Patent discloses a flow channel formed by a spacer.

Claim 11: Claim 15 of the '560 Patent discloses a flow channel located between one of the electrodes and the first charge barrier.

Claim 12: Claim 16 of the '560 Patent discloses a second charge barrier and further containing a flow channel located between the first and second charge barriers.

Claim 13: Claim 3 of the '560 Patent discloses an electrically-conductive membrane with a low resistance-capacitance (RC) time constant

Claim 14: Claim 4 of the '560 Patent discloses that the capacitance of the charge barrier is less than 20 farads/gram.

Claim 15: Claim 17 of the '560 Patent discloses that the charge barrier is electrically connected to a first power supply, and at least one of the plurality of electrodes is electrically connected to a second power supply.

Claim 16: Claim 18 of the '560 Patent discloses that the charge barrier has a voltage and the electrode has a voltage, the charge barrier voltage being greater than the electrode voltage.

Claim 17: Claim 12 of the '560 Patent discloses that the charge barrier membranes are identically-charged semipermeable membranes, selected from the group consisting of cation exchange membranes and anion exchange membranes.

Claim 18: Claim 19 of the '560 Patent discloses that the capacitor comprises a series resistance of less than 50 ohm cm.

Claim 19: Claim 20 of the '560 Patent discloses that the capacitor has a series resistance to leakage ratio of greater than 100.

Claim 20: Claim 21 of the '560 Patent discloses that the electrodes within a cell of the capacitor are ionically insulated and connected electrically in series.

Claim 21: Claim 22 of the '560 Patent a flow path adjacent to each of the electrodes.

Claim 22: Claim 23 of the '560 Patent discloses the flow-through capacitor of claim 1 and a valve.

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Claim 23: Claim 24 of the '560 Patent discloses that the valve is a feedback valve.

Claim 24: Claim 25 of the '560 Patent discloses that valve is a three-way valve.

Claim 25: Claim 26 of the '560 Patent discloses a means for allowing fluid in the system to bypass a flow-through capacitor in the system.

Claim 26: Claim 27 of the '560 Patent discloses a means for directing fluid in the system from the flow-through capacitor to a second flow-through capacitor in the system.

Claim 27: Claim 28 of the '560 Patent discloses a means for monitoring the concentration of ions in a fluid in said system.

Claim 28: Claim 29 of the '560 Patent discloses a means for controlling the concentration of ions in a fluid in said system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas H Parsons whose telephone number is (571) 272-1290. The examiner can normally be reached on M-F (7:00-4:30) First Friday Off.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thomas H Parsons  
Examiner  
Art Unit 1745

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Patrick Ryan  
Supervisory Patent Examiner  
Technology Center 1700